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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,973	09/23/2003	Toshio Fujii	1114-191	7884

23117 7590 03/11/2005

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EXAMINER	
CHUNG, DAVID Y	
ART UNIT	**PAPER NUMBER**
2871	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,973	FUJII ET AL.	
	Examiner	Art Unit	
	David Y. Chung	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 9-15* is/are rejected.

7)☒ Claim(s) *5-8 and 16-19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05 March 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The meaning of "mutually coincident" and "mutually deviate" is unclear. This lack of clarity makes the scope of the claims difficult to ascertain. For this examination, "mutually coincident" will be interpreted as being arranged in a substantially regular manner, and "mutually deviate" will be interpreted as being arranged in a somewhat irregular manner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-4 and 9-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. (U.S. 6,593,982) in view of Bahadur (Liquid Crystals).

As to claims 1 and 14, Yoon et al. discloses a wide viewing angle liquid crystal display device. Note in figures 10 and 11, array substrate 1, pixel electrodes 50 for driving the liquid crystal 90, gate lines 4 and data lines 40 which are electrically connected to the driving devices, counter substrate 60, and transparent conductive layer 80. See column 7, line 50 – column 8, line 65. Yoon et al. teaches that a thin film transistor (driving device) is formed from a semiconductor layer. See column 8, lines 15-23. Note in figure 11, the non-display portions corresponding to the black matrix 70. The driving devices and wiring are disposed in this non-display region as shown in figures 10 and 11. The transparent conductive layer 80 is formed on at least the display portion of the counter substrate 60.

Yoon et al. does not disclose bonding the two substrates and injecting liquid crystal material between them. Bahadur shows that bonding two substrates and injecting liquid crystal material between them was a typical part of conventional LCD manufacturing processes. See pages 185-187. It would have been obvious to one of ordinary skill in the art at the time of invention to use the conventional method shown in Bahadur because conventional manufacturing methods were often the most cost effective and reliable way to fabricate a device.

As to claim 2, because the thickness of the liquid crystal layer in the non-display portion is greater than the thickness in the display portion, it naturally follows that $t1 > 0.48*t2$.

As to claim 3, Yoon et al. does not disclose a transparent layer formed of a resin. Bahadur discloses that a passivation layer is typically formed between the color filter and counter electrode on the counter substrate. Passivation layers are typically made of inorganic material such as silicon oxides or silicon nitrides, or organic resins such as acrylic resin. Both types were well known for being good insulators and cost-effective to manufacture. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form an transparent layer using an organic resin because of the aforementioned benefits.

As to claims 4 and 15, Yoon et al. discloses a shading film (black matrix) 70 in the non-display portion as shown in figure 11.

As to claims 9 and 10, Yoon et al. discloses a pixel electrode matrix in figures 13 and 14. The pixel electrodes are considered to be mutually coincident in both the column and row direction since they are arranged at regular intervals in both directions. The shading films 70 are arranged between columns and rows of pixel electrodes and extend in both the column and row direction of the pixel electrode matrix in figures 13 and 14.

As to claim 11, the pixel electrodes shown in figure 10 are considered to deviate by a half cycle in the row direction since they are aligned at a 45-degree angle to the

row direction. The shading films 70 are arranged between columns and rows of pixel electrodes and extend in the column direction of the pixel electrode matrix.

As to claim 12, Yoon et al. discloses that the conductive layer is formed of a transparent material such as ITO or IZO. See column 6, lines 28-32. Yoon et al. does not disclose that the mean transmission factor is at least 80%. Bahadur discloses that with electrodes made of ITO, a minimum for transmission for typical film thicknesses is 80%. See figure 5 on page 182. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention that the ITO conductive layer disclosed by Yoon et al. would have a transmission factor of at least 80%.

As to claim 13, Yoon et al. does not disclose the thickness of the transparent conductive layer. Bahadur discloses that the typical thickness of a transparent conductive layer ranges from about 50nm to 200nm. See figure 5 on page 182. It would have been obvious to one of ordinary skill in the art at the time of invention to form the transparent conductive layer of Yoon et al. to be 2 microns or less because conventional thickness values ranged from 50nm to 200nm. Using conventional values for various parameters had the benefit of producing a device with well understood and predictable behavior.

Allowable Subject Matter

Claims 5-8 and 16-19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art taught or suggested an insulating layer formed only in the display portion but not in the non-display portion. Also, none of the prior art taught or suggested the specific manufacturing steps recited in claims 16-19

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (571) 272-2288. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.

ROBERT H. KIM
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David Chung
GAU 2871
03/04/05